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Pat. No. 05970399 - 1
Issue Date: 06/21/04

Group ID: E
User ID: sjvaugh Page 1
KS: 7,343

Warning [US Ref Patentee Last Name: Page:5 Posn:3]

 Last Name does not have an upper case first letter

Invalid [Pages Of US References:]

 position 2 on page 10 refers to an item that is not a duplicate

Marker [Pages Of US References:]

Warning [Pages Of US References:]

 page 4 has no references

 page 9 has no references

Warning [Pages Of Foreign References:]

 page 1 has no references

 page 2 has no references

 page 4 has no references

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Warning [Pages Of Other References:]

 page 1 has no references

 page 2 has no references

 page 3 has no references

 page 10 has no references

Warning [Inventor Names Versus Inventors:]

 the inventors at position 4 do not match because the middle name(C.
 D.) from the oath does not have the same first letter as the
 middle name(D.) from checklist

CHECK LIST

Rule 47 Continuing Data PCT Disclaimer

No Yes No No

Microfiche Appendix CPA tag

No No

Foreign Priority Claimed: No
Acknowledged: No

State Code: CA Country Code:

Text Endorsement: 09576652.052200

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JACKET

<u>SERIAL NUMBER</u>	<u>FILING DATE</u>	<u>CLASS</u>	<u>SUBCLASS</u>	<u>GAU</u>
09/576,652	05/22/00	455	13.1	2684

FOREIGN PRIORITY
Country Document Number Date

DISCLAIMER

/ /

TITLE

Multi-node point-to-point satellite communication system employing
multiple geo satellites

MICROFICHE APPENDIX

ASSISTANT EXAMINER:

<u>First:</u>	<u>Middle:</u>	<u>Last:</u>
Raymond		Dean

PRIMARY EXAMINER:

<u>First:</u>	<u>Middle:</u>	<u>Last:</u>
Nay		Maung

CLAIMS ALLOWED
Total Print

19 1

DRAWINGS
Sheets Figures Print

5 9 Y

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BLUE SLIP INFORMATION

<u>SERIAL</u>	<u>NUMBER</u>	<u>CLASS</u>	<u>SUBCLASS</u>	<u>GAU</u>
09/576,652		455	13.1	2684

<u>INDEP. CLAIMS</u>	<u>TOTAL CLAIMS</u>
1, 7, 14	19

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BLUE SLIP (Page 1)

INTERNATIONAL CLASSIFICATION
Class SubClass

H04B 7/19

CROSS-REFERENCES
Class SubClass

455 13.2;427

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TERM EXTENSION

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FIELD OF SEARCH

Class SubClass

342 388;418;357

398 125

455 427;429;430;426;12.1;13.1

375 1

370 95;320;325

244 158 R;159

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OATH

INVENTOR NAME

<u>First:</u>	<u>Middle:</u>	<u>Last:</u>	<u>Signed:</u>
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Frank	A.	Hagen	Yes
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City: Palos Verdes Estates

State: CA ZIP Code: Country: Foreign ZIP:

INVENTOR NAME

<u>First:</u>	<u>Middle:</u>	<u>Last:</u>	<u>Signed:</u>
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Richard		Flammang	Yes
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City: Manhattan Beach

State: CA ZIP Code: Country: Foreign ZIP:

INVENTOR NAME

<u>First:</u>	<u>Middle:</u>	<u>Last:</u>	<u>Signed:</u>
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Kar	W.	Yung	Yes
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City: Torrance

State: CA ZIP Code: Country: Foreign ZIP:

INVENTOR NAME

<u>First:</u>	<u>Middle:</u>	<u>Last:</u>	<u>Signed:</u>
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Donald	C. D.	Chang	Yes
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City: Thousand Oaks

State: CA ZIP Code: Country: Foreign ZIP:

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PCT INFO

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<u>LINE</u>	<u>CODE</u>	<u>SERIAL NUMBER</u>	<u>FILING DATE</u>	<u>STATUS</u>	<u>DOCUMENT NO.</u>	<u>ISSUE DATE</u>
104	72	09/271,997	03/18/1999			/ /

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REFERENCES (Page 1) SERIAL NUMBER: 09/576,652
FORM 892

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
*6,301,231	10/2001	Hassan et al.	370	316
No issue date available.				
*6,226,493	05/2001	Leopold et al.	455	13.1
No issue date available.				
5,589,834	12/1996	Weinberg	342	354

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
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OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

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REFERENCES (Page 2) SERIAL NUMBER: 09/576,652
FORM 892

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
<1,3>5,589,834	12/1996	Weinberg	342	354
*<1,2>6,226,493	05/2001	Leopold et al.	455	13.1
No issue date available.				

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
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OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

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REFERENCES (Page 3) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
5,444,450	08/1995	Olds et al.	342	357
3,544,995	12/1970	Bottenberg et al.	342	46
3,384,891	05/1968	Anderson	342	357
5,387,916	02/1995	Cohn	342	44
4,897,661	01/1990	Hiraiwa	342	457
5,006,855	04/1991	Braff	342	357
4,359,733	11/1982	O+3 Neill	343	6.5
4,161,734	07/1979	Anderson	342	352
4,613,864	09/1986	Hofgen	343	357
4,994,809	02/1991	Yung et al.	342	108
5,099,245	03/1992	Sagey	342	357
5,410,314	04/1995	Frush et al.	342	26
5,525,995	06/1996	Benner	342	90
4,161,730	07/1979	Anderson	342	352
2,470,787	05/1949	Nosker	342	12
5,126,748	06/1992	Ames et al.	342	353
5,920,284	07/1999	Victor	342	357.01
5,944,770	08/1999	Enge et al.	701	707
5,945,948	08/1999	Buford et al.	342	457
5,969,674	10/1999	Von Der Embse et al.	342	357.17
5,111,209	05/1992	Toriyama	342	357

5,739,785 04/1998 Allison et al. 342 357

FOREIGN REFERENCES

<u>Foreign</u>	<u>Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
0	335 558	04/1989	EPX		
3-	291584	12/1991	JPX		
09026328		01/1997	JPX		
2-	28580	01/1990	JPX		
4-	27887	01/1992	JPX		
07146995A		06/1995	JPX		
08015405A		01/1996	JPX		
09113600A		05/1997	JPX		
10090391A		04/1998	JPX		
2	306 827 A	05/1997	GBX		
2	271 902 A	10/1993	GBX		

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

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REFERENCES (Page 4) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
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FOREIGN REFERENCES

<u>Foreign</u>	<u>Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
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OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

Teles J et al.: +37 Overview of TDRSS+38 +0 Orbit Determination and
Analysis. PSD Meeting, Cospar Technical Panel on Satellite Dynamics,
13+hu th +1 Cospar Scientific Assembly, Hamburg, Germany, Jul. 11-21,
1994, Advances in Space Research, pp. 67-76.

Bricker, P et al.: +37 Integrated Receiver for NASA Tracking and Data Relay Satellite System+38 , MILCOM 90. A new Era, 1990 IEEE Military Communications Conference, Monterey, CA, USA, Sep. 30- Oct. 3, 1990, pp. 1-5.

Dunham, J B, et al.: +37 Onboard Orbit Estimation with Tracking and Data Relay Satellite System Data+38 , Journal of Guidance, Control, and Dynamics, Jul.-Aug. 1983, USA, vol. 6 NR.4, pp. 292-301.

K. H. Bethke, +37 A Novel Noncooperative Near-Range Radar Network or Traffic Guidance and Control on Airport Surfaces+38 , IEEE Transactions on Control Systems Technology, vol. 1, No. 3, Sep. 1993.

Doc 9524 FANS/4-WP/76, International Civil Aviation Organization, Special Committee on Future Air Navigation Systems, Fourth Meeting, Montreal, May 2-20, 1988, Report, pp. 3.2B-2 & 3.2B-3.

=====

REFERENCES (Page 5) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
5,485,485	01/1996	Briskman et al.	375	200
<3,2>3,544,995	12/1970	Böttenberg et al.	343	46
<3,20>5,969,674	10/1999	von der Embse et al.	342	357.16
5,644,572	07/1997	Olds et al.	370	324
<3,3>3,384,891	05/1968	Anderson	343	100
4,819,227	04/1989	Rosen	370	75
5,278,863	01/1994	Briskman	375	1

5,319,673	06/1994 Briskman	375	1
5,592,471	01/1997 Briskman	455	52.3
5,864,579	01/1999 Briskman	375	200
5,233,626	08/1993 Ames	375	1
*6,138,012	10/2000 Krutz et al.	455	427

No issue date available.

FOREIGN REFERENCES

<u>Foreign</u>	<u>Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
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OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

U.S. patent application Ser. No. 09/584,012, Chang et al., filed May 30, 2000.

U.S. patent application Ser. No. 09/576,648, Yung et al., filed May 22, 2000.

U.S. patent application Ser. No. 09/644,225, Hagen et al., filed Aug. 21, 2000.

U.S. patent application Ser. No. 09/587,960, Yung et al., filed Jun. 6, 2000.

U.S. patent application Ser. No. 09/587,759, Yung et al., filed Jun. 6, 2000.

U.S. patent application Ser. No. 09/271,997, Chang et al., filed Mar. 18, 1999.

U.S. patent application Ser. No. 09/209,062, Yung et al., filed Dec. 10, 1998.

U.S. patent application Ser. No. 09/550,505, Chang et al., filed Apr.
17, 2000.

U.S. patent application Ser. No. 08/803,937, Chang et al., filed Feb.
21, 1997.

U.S. patent application Ser. No. 09/669,095, Yung et al., filed Sep.
25, 2000.

U.S. patent application Ser. No. 09/655,498, Chang et al., filed Sep.
5, 2000.

REFERENCES (Page 6) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
5,949,766	09/1999	Ibanez-Meier et al.		
*6,151,308	11/2000	Ibanez-Meier et al.		
No issue date available.				

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
------------------------	-------------	----------------	--------------	-----------------

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

K. K. Chan, F. Marcoux, M. Forest, L. Martins-Camelo, +37 A Circularly
Polarized Waveguide Array for Leo Satellite Communications+38 , pp.
154-157, IEEE 1999 AP-S International Symposium, Jun. 1999.

M. Oodo, R. Miura, Y. Hase, +37 Onboard DBF Antenna for Stratospheric
Platform+38 , pp. 125-128, IEEE Conference on Phased Array Systems and
Technology, California, May 21-25, 2000.

Yokosuka Research park, +37 The First Stratospheric Platform Systems
Workshop+38 , pp 1-216, May 12-13, 1999.

=====

REFERENCES (Page 7) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
5,109,390	04/1992	Gilhousen et al.		
5,339,330	08/1994	Mallinckrodt		
5,365,447	11/1994	Dennis		
5,379,320	01/1995	Fernandes et al.		
5,408,237	04/1995	Patterson et al.		
5,423,059	06/1995	LoGalbo et al.		
5,467,282	11/1995	Dennis		
5,572,216	11/1996	Weinberg et al.		
5,592,481	01/1997	Wiedeman et al.		
5,594,941	01/1997	Dent		
5,608,722	03/1997	Miller		
5,617,410	04/1997	Matsumoto		
5,867,109	02/1999	Wiedeman		
5,903,549	05/1999	Von Der Embse et al.		
5,907,813	05/1999	Johnson, Jr. et al.		
5,918,157	06/1999	Wiedeman et al.		
5,956,619	09/1999	Gallagher et al.		
*6,020,845	02/2000	Weinberg et al.		
No issue date available.				
*6,032,041	02/2000	Wainfan et al.		
No issue date available.				

FOREIGN REFERENCES

<u>Foreign</u>	<u>Doc</u>	<u>No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
0682	416	A2	11/1995	EPX		
0	749	252 A	12/1996	EPX		
0776	099	A2	05/1997	EPX		
0	845	874 A2	06/1998	EPX		
0	860	708 A	08/1998	EPX		
0	860	709 A	08/1998	EPX		

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

Colella, Nicholas J. et al., +37 The HALO Network+198 +38 , IEEE
Communications Magazine, Jun. 2000, pp. 142-148.

Colella, Nicholas J. et al., +37 High Speed Internet Access via
Stratospheric HALO Aircraft+38 , INET 99 Proceedings, Internet
Society, Technology, Wireless, 13 pages, Jun. 8, 1999.

=====
REFERENCES (Page 8) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
*6,067,442	05/2000	Wiedeman et al.		
No issue date available.				
*6,104,911	08/2000	Diekelman		
No issue date available.				
*6,195,555	02/2001	Dent		
No issue date available.				
*6,229,477	05/2001	Chang et al.		
No issue date available.				
*6,246,363	06/2001	Yung et al.		
No issue date available.				

*6,266,533 07/2001 Zadeh et al.
No issue date available.

*6,295,440 09/2001 Chang et al.
No issue date available.

*<1,1>6,301,231 10/2001 Hassan et al.
No issue date available.

*6,313,790 11/2001 Chang et al.
No issue date available.

*6,314,269 11/2001 Hart et al.
No issue date available.

*6,324,381 11/2001 Anselmo et al.
No issue date available.

*6,336,030 01/2002 Houston et al.
No issue date available.

*6,337,980 01/2002 Chang et al.
No issue date available.

*6,340,947 01/2002 Chang et al.
No issue date available.

*6,377,208 04/2002 Chang et al.
No issue date available.

*6,388,615 05/2002 Chang et al.
No issue date available.

*6,563,457 05/2003 Chang et al.
No issue date available.

2001/0000167 04/2001 Chang et al.

2001/0045903 11/2001 Chang et al.

2002/0053987 05/2002 Chang et al.

FOREIGN REFERENCES

<u>Foreign</u>	<u>Doc</u>	<u>No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
0	860	710 A2	08/1998	EPX		
0	860	952 A	08/1998	EPX		
1	037	403 A2	09/2000	EPX		

1 148 662 A2 10/2001 EPX
1 158 698 A2 11/2001 EPX
2 349 045 10/2000 GBX

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

Colella, Nicholas, +37 HALO Network+13 The Birth of Stratospheric
Communications Services & the Decline of Satellite Networks+38 ,
<http://www.angelhalo.com/techpaper6>, Copyright 1997-1999.

Djuknic, Goran et al., +37 Establishing Wireless Communications
Services via High-Aeronautical platforms: A concept Whose Time Has
Come+48 +38 +0 IEEE Communications Magazine, Sep. 1997, pp. 128-135.

=====

REFERENCES (Page 9) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
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FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
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08-331030	12/1996	JPX		
10-209939	08/1998	JPX		
11-8579	01/1999	JPX		
WO 01/93458 A2	12/2001	WOX		
WO 01/94969 A2	12/2001	WOX		
WO 01/95520 A2	12/2001	WOX		
WO 01/95522 A1	12/2001	WOX		
WO 90/13186	11/1990	WOX		
WO 95/04407	02/1995	WOX		

WO 96/22661 07/1996 WOX
WO 9851568 A 11/1998 WOX
WO 99/13598 03/1999 WOX

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

Martin, James N. et al., +37 HALO Network+13 The Cone of Commerce+38 ,
<http://www.angelhalo.com/techpaper2>, copyright 1997-1998.

Martin, James N. et al., +37 HALO Network+13 Broadband Wireless
Services from High Altitude Long Operation (HALO) Aircraft+38 ,
<http://www.angelhalo.com/techpaper2>, copyright 1997-1998.

Akyildiz, Ian F. et al., +37 HALO (High Altitude Long Operation): A
Broadband Wireless Metropolitan Area Network+38 , IEEE International
Workshop on Mobile Multimedia Communications, Nov. 1999, pp/. 271-275.

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REFERENCES (Page 10) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
5,839,053	11/1998	Bosch et al.	455	13.1
<7,10>5,233,626	08/1993	Ames	375	1

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
0 837 568 A2	04/1998	EPX		

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

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VALID

Pat. No. 05970399 - 1
Issue Date: 06/21/04

Group ID: E
User ID: sjvaugh Page 1
KS: 7,257

Warning [US Ref Patentee Last Name: Page:3 Posn:19]
Last Name does not have an upper case first letter

Warning [US Ref Patentee Last Name: Page:5 Posn:3]
Last Name does not have an upper case first letter

Warning [US Ref Patentee Last Name: Page:7 Posn:14]
Last Name does not have an upper case first letter

Warning [Pages Of US References:]
page 4 has no references
page 9 has no references

Warning [Pages Of Foreign References:]
page 1 has no references
page 2 has no references
page 4 has no references
page 5 has no references
page 6 has no references
page 10 has no references

Warning [Pages Of Other References:]
page 1 has no references
page 2 has no references
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page 10 has no references

Warning [Inventor Names Versus Inventors:]
the inventors at position 4 do not match because the middle name(C.
D.) from the oath does not have the same first letter as the
middle name(D.) from checklist

E

CHECK LIST

Rule 47 Continuing Data PCT Disclaimer

No / Yes / No / No /

Microfiche Appendix CPA tag

No / No /

Foreign Priority Claimed: No /
Acknowledged: No /

State Code: CA / Country Code:

Text Endorsement: 09576652.052200 /

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JACKET

<u>SERIAL NUMBER</u>	<u>FILING DATE</u>	<u>CLASS</u>	<u>SUBCLASS</u>	<u>GAU</u>
09/576,652 /	05/22/00 /	455 /	13.1 /	2684 /

FOREIGN PRIORITY
Country Document Number Date

DISCLAIMER

/ /

TITLE

Multi-node point-to-point satellite communication system employing
multiple geo satellites

MICROFICHE APPENDIX

ASSISTANT EXAMINER:

First: Middle: Last:

Raymond / Dean /

PRIMARY EXAMINER:

First: Middle: Last:

Nay / Maung /

CLAIMS ALLOWED
Total Print

19 / 1 /

DRAWINGS

Sheets Figures Print

5 / 9 / Y /

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BLUE SLIP INFORMATION

<u>SERIAL</u> <u>NUMBER</u>	<u>CLASS</u>	<u>SUBCLASS</u>	<u>GAU</u>
09/576,652 /	455 /	13.1 /	2684 /

<u>INDEP.</u> <u>CLAIMS</u>	<u>TOTAL</u> <u>CLAIMS</u>
/ / / 1, 7, 14	19 /

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BLUE SLIP (Page 1)

INTERNATIONAL CLASSIFICATION

Class SubClass

H04B / 7/19 /

CROSS-REFERENCES

Class SubClass

455 / 13.2; 427 /

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TERM EXTENSION

0 /

FIELD OF SEARCH

Class SubClass

342 / 388; 418; 357 /
398 / 125 /

←

455 ✓ 427;429;430;426;12.1;13.1
375 ✓ 1 ✓
370 ✓ 95;320-357;325 -
244 158 R;159 -



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OATH

INVENTOR NAME

<u>First:</u>	<u>Middle:</u>	<u>Last:</u>	<u>Signed:</u>
Frank ✓	A. ✓	Hagen ✓	Yes ✓
<u>City:</u>	Palos Verdes Estates ✓		
<u>State:</u> CA ✓	<u>ZIP Code:</u>	<u>Country:</u>	<u>Foreign ZIP:</u>

INVENTOR NAME

<u>First:</u>	<u>Middle:</u>	<u>Last:</u>	<u>Signed:</u>
Richard ✓		Flammang ✓	Yes ✓
<u>City:</u>	Manhattan Beach ✓		
<u>State:</u> CA ✓	<u>ZIP Code:</u>	<u>Country:</u>	<u>Foreign ZIP:</u>

INVENTOR NAME

<u>First:</u>	<u>Middle:</u>	<u>Last:</u>	<u>Signed:</u>
Kar ✓	W. ✓	Yung ✓	Yes ✓
<u>City:</u>	Torrance ✓		
<u>State:</u> CA ✓	<u>ZIP Code:</u>	<u>Country:</u>	<u>Foreign ZIP:</u>

INVENTOR NAME

<u>First:</u>	<u>Middle:</u>	<u>Last:</u>	<u>Signed:</u>
Donald ✓	C. D. ✓	Chang ✓	Yes ✓
<u>City:</u>	Thousand Oaks ✓		
<u>State:</u> CA ✓	<u>ZIP Code:</u>	<u>Country:</u>	<u>Foreign ZIP:</u>

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PCT INFO

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<u>LINE</u>	<u>CODE</u>	<u>SERIAL NUMBER</u>	<u>FILING DATE</u>	<u>STATUS</u>	<u>DOCUMENT NO.</u>	<u>ISSUE DATE</u>
104	72 /	09/271,997 /	03/18/1999 /			/ /

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FORM 892 /

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<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
*6,301,231 / No issue date available.	/ 10/2001	Hassan et al. /	370 /	316 /
*6,226,493 / No issue date available.	/ 05/2001	Leopold et al. /	455 /	13.1 /
5,589,834 /	/ 12/1996	Weinberg /	342 /	354 /

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
------------------------	-------------	----------------	--------------	-----------------

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

=====

REFERENCES (Page 2) SERIAL NUMBER: 09/576,652 /
FORM 892 /

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
<1,3>5,589,834 /	12/1996	Weinberg /	342 /	354 /
*<1,2>6,226,493 / No issue date available.	05/2001	Leopold et al. /	455 /	13.1 /

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
------------------------	-------------	----------------	--------------	-----------------

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

=====

REFERENCES (Page 3) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
5,444,450 ✓	✓08/1995	Olds et al. ✓	342 ✓	357 ✓
3,544,995 ✓	✓12/1970	Bottenberg et al. ✓	342 ✓	46 ✓
3,384,891 ✓	✓05/1968	Anderson -	342 ✓	357 ✓
5,387,916	02/1995	Cohn	342	44 ←
4,897,661 ✓	✓01/1990	Hiraiwa ✓	342 -	457 ✓
5,006,855 ✓	✓04/1991	Braff ✓	342 ✓	357 ✓
4,359,733 ✓	✓11/1982	O+3 Neill -	343 ✓	6.5 ✓
4,161,734 ✓	✓07/1979	Anderson -	342 ✓	352 ✓
4,613,864 ✓	✓09/1986	Hofgen ✓	343 ✓	357 ✓
4,994,809 ✓	✓02/1991	Yung et al. ✓	342 ✓	108 ✓
5,099,245 ✓	✓03/1992	Sagey -	342 ✓	357 ✓
5,410,314 ✓	✓04/1995	Frush et al. ✓	342 ✓	26 ✓
5,525,995 ✓	✓06/1996	Benner ✓	342 ✓	90 ✓
4,161,730 ✓	✓07/1979	Anderson -	342 ✓	352 ✓
2,470,787 ✓	✓05/1949	Nosker ✓	342 ✓	12 ✓
5,126,748 ✓	✓06/1992	Ames et al. ✓	342 ✓	353 ✓
5,920,284 ✓	✓07/1999	Victor ✓	342 ✓	357.01 ✓
5,944,770 ✓	✓08/1999	Enge et al. ✓	701 ✓	707 ✓
5,945,948 ✓	✓08/1999	Buford et al. ✓	342 ✓	457 ✓
5,969,674 ✓	✓10/1999	von der Embse et al. ✓	342 ✓	✓357.17 ←
5,111,209 ✓	✓05/1992	Toriyama ✓	342 ✓	357 ✓
5,739,785 ✓	✓04/1998	Allison et al. ✓	342 ✓	357 ✓

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
------------------------	-------------	----------------	--------------	-----------------

0 335 558 / 04/1989 EPX /
3-291584 / 12/1991 JPX /
09026328 / 01/1997 JPX /
2-28580 / 01/1990 JPX /
4-27887 / 01/1992 JPX /
07146995A / 06/1995 JPX /
08015405A / 01/1996 JPX /
09113600A / 05/1997 JPX /
10090391A / 04/1998 JPX /
2 306 827 A / 05/1997 GBX /
2 271 902 A / 10/1993 GBX /

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

=====

REFERENCES (Page 4) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
---------------------	-------------	-----------------	--------------	-----------------

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
------------------------	-------------	----------------	--------------	-----------------

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

Teles J et al.: +37 Overview of TDRSS+38 +0 Orbit Determination and
Analysis. PSD Meeting, Cospar Technical Panel on Satellite Dynamics,
th₁₃th Cospar Scientific Assembly, Hamburg, Germany, Jul. 11-21, 1994,
Advances in Space Research, pp. 67-76.

Bricker, P et al.: +37 Integrated Receiver for NASA Tracking and Data
Relay Satellite System+38 , MILCOM 90. A new Era, 1990 IEEE Military

Communications Conference, Monterey, CA, USA, Sep. 30- Oct. 3, 1990,
pp. 1-5.

Dunham, J B, et al.: +37 Onboard Orbit Estimation with Tracking and
Data Relay Satellite System Data+38 , Journal of Guidance, Control,
and Dynamics, Jul. -Aug. 1983, USA, vol. 6 NR.4, pp. 292-301.

K. H. Bethke, +37 A Novel Noncooperative Near-Range Radar Network or
Traffic Guidance and Control on Airport Surfaces+38 , IEEE
Transactions on Control Systems Technology, vol. 1, No. 3, Sep. 1993.

Doc 9524 FANS/4-WP/76, International Civil Aviation Organization,
Special Committee on Future Air Navigation Systems, Fourth Meeting,
Montreal, May 2-20, 1988, Report, pp. 3.2B-2 & 3.2B-3.

=====

REFERENCES (Page 5) SERIAL NUMBER: 09/576,652 ✓
FORM 1449 ✓

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
5,485,485 ✓	01/1996	Briskman et al.	375 3	200
<3,2>3,544,995	12/1970	Bottenberg et al.	340	46 ←
<3,19>5,969,674	10/1999	von der Embse et al.	342 ✓	357.16 ←
5,644,572	07/1997	Olds et al.	370	324 ←
<3,3>3,384,891	05/1968	Anderson	342 3	357 100 ←
4,819,227 ✓	04/1989	Rosen ✓	370 ✓	75 -
5 *6,278,863	01/1994 08/2002	Briskman Mabrouki	375 ✓	1 - ←
No issue date available.				
5,319,673 ✓	06/1994	Briskman ✓	375 ✓	1 ✓
5,592,471 ✓	01/1997	Briskman ✓	455 ✓	52.3 ✓
5,864,579 ✓	01/1999	Briskman ✓	375 ✓	200 ✓

5,233,626 ✓	08/1993 Ames ✓	375 ✓	1 ✓
*6,138,012 ✓	10/2000 Krutz et al. ✓	455 ✓	427 ✓
No issue date available.			

FOREIGN REFERENCES

<u>Foreign</u>	<u>Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
----------------	----------------	-------------	----------------	--------------	-----------------

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

U.S. patent application Ser. No. 09/584,012, Chang et al., filed May 30, 2000. ✓

U.S. patent application Ser. No. 09/576,648, Yung et al., filed May 22, 2000. ✓

U.S. patent application Ser. No. 09/644,225, Hagen et al., filed Aug. 21, 2000. ✓

U.S. patent application Ser. No. 09/587,960, Yung et al., filed Jun. 6, 2000. ✓

U.S. patent application Ser. No. 09/587,759, Yung et al., filed Jun. 6, 2000. ✓

U.S. patent application Ser. No. 09/271,997, Chang et al., filed Mar. 18, 1999. ✓

U.S. patent application Ser. No. 09/209,062, Yung et al., filed Dec. 10, 1998. ✓

U.S. patent application Ser. No. 09/550,505, Chang et al., filed Apr. 17, 2000. ✓

U.S. patent application Ser. No. 08/803,937, Chang et al., filed Feb. 21, 1997.

U.S. patent application Ser. No. 09/669,095, Yung et al., filed Sep. 25, 2000.

U.S. patent application Ser. No. 09/655,498, Chang et al., filed Sep. 5, 2000.

=====

REFERENCES (Page 6) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
5,949,766	09/1999	Ibanez-Meier et al.		
*6,151,308	11/2000	Ibanez-Meier et al.		
No issue date available.				

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
------------------------	-------------	----------------	--------------	-----------------

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

K. K. Chan, F. Marcoux, M. Forest, L. Martins-Camelo, +37 A Circularly Polarized Waveguide Array for Leo Satellite Communications+38 , pp. 154-157, IEEE 1999 AP-S International Symposium, Jun. 1999.

M. Oodo, R. Miura, Y. Hase, +37 Onboard DBF Antenna for Stratospheric Platform+38 , pp. 125-128, IEEE Conference on Phased Array Systems and Technology, California, May 21-25, 2000.

Yokosuka Research park, +37 The First Stratospheric Platform Systems Workshop+38 , pp 1-216, May 12-13, 1999.

=====

REFERENCES (Page 7) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
5,109,390 ✓	✓04/1992	Gilhousen et al. ✓		
5,339,330 ✓	✓08/1994	Mallinckrodt ✓		
5,365,447 ✓	✓11/1994	Dennis ✓		
5,379,320 ✓	✓01/1995	Fernandes et al. ✓		
5,408,237 ✓	✓04/1995	Patterson et al. ✓		
5,423,059 ✓	✓06/1995	LoGalbo et al. ✓		
5,467,282 ✓	✓11/1995	Dennis ✓		
5,572,216 ✓	✓11/1996	Weinberg et al. ✓		
5,592,481 ✓	✓01/1997	Wiedeman et al. ✓		
5,594,941 ✓	✓01/1997	Dent ✓		
5,608,722 ✓	✓03/1997	Miller ✓		
5,617,410 ✓	✓04/1997	Matsumoto ✓		
5,867,109 ✓	✓02/1999	Wiedeman ✓		
5,903,549 ✓	✓05/1999	von der Embse et al. ≡		
5,907,813 ✓	✓05/1999	Johnson, Jr. et al. ✓		
5,918,157 ✓	✓06/1999	Wiedeman et al. ✓		
5,956,619 ✓	✓09/1999	Gallagher et al. ✓		
*6,020,845 ✓	✓02/2000	Weinberg et al. ✓		
No issue date available.				
*6,032,041 ✓	✓02/2000	Wainfan et al. ✓		
No issue date available.				

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
0682 416 A2 ✓	✓11/1995	EPX ✓		

0 749 252 A ✓ 12/1996 EPX ✓
0776 099 A2 ✓ 05/1997 EPX ✓
0 845 874 A2 ✓ 06/1998 EPX ✓
0 860 708 A ✓ 08/1998 EPX ✓
0 860 709 A ✓ 08/1998 EPX ✓

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

Colella, Nicholas J. et al., +37 The HALO Network+198 +38 , IEEE
Communications Magazine, Jun. 2000, pp. 142-148. ←

Colella, Nicholas J. et al., +37 High Speed Internet Access via
Stratospheric HALO Aircraft+38 , INET 99 Proceedings, Internet
Society, Technology, Wireless, 13 pages, Jun. 8, 1999. ✓

=====

REFERENCES (Page 8) SERIAL NUMBER: 09/576,652 ✓
FORM 1449 ✓

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
*6,067,442 ✓ No issue date available.	05/2000	Wiedeman et al. ✓		
*6,104,911 ✓ No issue date available.	08/2000	Diekelman ✓		
*6,195,555 ✓ No issue date available.	02/2001	Dent ✓		
*6,229,477 ✓ No issue date available.	05/2001	Chang et al. ✓		
*6,246,363 ✓ No issue date available.	06/2001	Yung et al. ✓		
*6,266,533 ✓ No issue date available.	07/2001	Zadeh et al. ✓		
*6,295,440 ✓	09/2001	Chang et al. ✓		

No issue date available.

*6,301,231 / 10/2001 Hassan et al. /
No issue date available.

*6,313,790 / 11/2001 Chang et al. /
No issue date available.

*6,314,269 / 11/2001 Hart et al. /
No issue date available.

*6,324,381 / 11/2001 Anselmo et al. /
No issue date available.

*6,336,030 / 01/2002 Houston et al. /
No issue date available.

*6,337,980 / 01/2002 Chang et al. /
No issue date available.

*6,340,947 / 01/2002 Chang et al. /
No issue date available.

*6,377,208 / 04/2002 Chang et al. /
No issue date available.

*6,388,615 / 05/2002 Chang et al. /
No issue date available.

*6,563,457 / 05/2003 Chang et al. /
No issue date available.

2001/0000167 / 04/2001 Chang et al. /

2001/0045903 / 11/2001 Chang et al. /

2002/0053987 / 05/2002 Chang et al. /

FOREIGN REFERENCES

<u>Foreign</u>	<u>Doc</u>	<u>No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
0	860	710 A2 /	/ 08/1998	EPX /		
0	860	952 A /	/ 08/1998	EPX /		
1	037	403 A2 /	/ 09/2000	EPX /		
1	148	662 A2 /	/ 10/2001	EPX /		
1	158	698 A2 /	/ 11/2001	EPX /		

2 349 045 ✓ 10/2000 GBX ✓

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

Colella, Nicholas, +37 HALO Network+13 The Birth of Stratospheric
Communications Services & the Decline of Satellite Networks+38 ,
<http://www.angelhalo.com/techpaper6>, Copyright 1997-1999.

Djuknic, Goran et al., +37 Establishing Wireless Communications
Services via High-Aeronautical platforms: A concept Whose Time Has
Come+48 +38 +0 IEEE Communications Magazine, Sep. 1997, pp. 128-135.

=====

REFERENCES (Page 9) SERIAL NUMBER: 09/576,652 ✓
FORM 1449 ✓

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
---------------------	-------------	-----------------	--------------	-----------------

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
------------------------	-------------	----------------	--------------	-----------------

08-331030 ✓	✓12/1996	JPX ✓		
-------------	----------	-------	--	--

10-209939 ✓	✓08/1998	JPX ✓		
-------------	----------	-------	--	--

11-8579 ✓	✓01/1999	JPX ✓		
-----------	----------	-------	--	--

WO 01/93458 A2 ✓	✓12/2001	WOX ✓		
------------------	----------	-------	--	--

WO 01/94969 A2 ✓	✓12/2001	WOX ✓		
------------------	----------	-------	--	--

WO 01/95520 A2 ✓	✓12/2001	WOX ✓		
------------------	----------	-------	--	--

WO 01/95522 A1 ✓	✓12/2001	WOX ✓		
------------------	----------	-------	--	--

WO 90/13186 ✓	✓11/1990	WOX ✓		
---------------	----------	-------	--	--

WO 95/04407 ✓	✓02/1995	WOX ✓		
---------------	----------	-------	--	--

WO 96/22661 ✓	✓07/1996	WOX ✓		
---------------	----------	-------	--	--

WO 9851568 A ✓	✓11/1998	WOX ✓		
----------------	----------	-------	--	--

WO 99/13598 ✓	✓03/1999	WOX ✓		
---------------	----------	-------	--	--

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)

Martin, James N. et al., +37 Halo Network+13 The Cone of Commerce+38 ,
http://www.angelhalo.com/techpaper2, copyright 1997-1998.

Martin, James N. et al., +37 HALO Network+13 Broadband Wireless
Services from High Altitude Long Operation (HALO) Aircraft+38 ,
http://www.angelhalo.com/techpaper2, copyright 1997-1998.

Akyildiz, Ian F. et al., +37 HALO (High Altitude Long Operation): A
broadband Wireless Metropolitan Area Network+38 , IEEE International
Workshop on Mobile Multimedia Communications, Nov. 1999, pp/. 271-275.

REFERENCES (Page 10) SERIAL NUMBER: 09/576,652
FORM 1449

U.S. REFERENCES

<u>U.S. Pat No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Class</u>	<u>SubClass</u>
5,839,053	11/1998	Bosch et al.	455	13.1
<5,10>5,233,626	08/1993	Ames	375	1

FOREIGN REFERENCES

<u>Foreign Doc No.</u>	<u>Date</u>	<u>Country</u>	<u>Class</u>	<u>SubClass</u>
------------------------	-------------	----------------	--------------	-----------------

0A83725684 A2 4/1998 EPX

OTHER REFERENCE CITATIONS (incl. Author, Title, Date, Pertinent Pages, etc.)
